

SlimStack™ SMT Stacking

Board-to-Board Connectors

0.40 to 1.00mm (.016 to .039") Pitch

0.95 to 20.00mm (.037 to .787") Height



INTRODUCTION

SlimStack: The Industry's Broadest Range of Micro SMT Stacking Connectors.

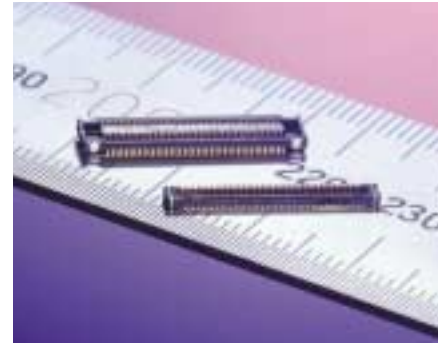
SlimStack offers designers a wide variety of space-saving choices for applications such as cell phones, digital cameras, PDAs and other mobile devices.

The latest additions to our SlimStack family include stack heights as low as 0.95mm (.037") and space-saving J-Bend SMT tails that save up to 35% PCB space. Contact your Molex representative to see how SlimStack can help you save valuable PCB real-estate.

System Overview:

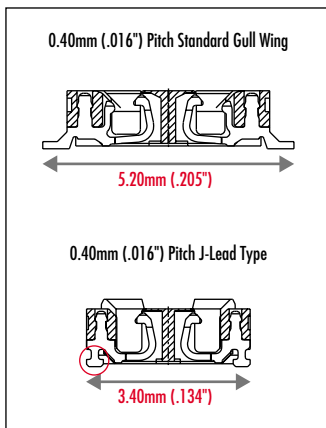
- Pitch sizes: 0.40, 0.50, 0.635 and 1.00mm (.016, .020, .025 and .039")
- Stack Heights: 0.95 to 20.00mm (.037 to .787")
- Circuit Size Range: 7 to 240
- Board Mounting: SMT
- Plating: Gold
- Mating Styles: Vertical and Right Angle
- Related Products:
 - *0.635mm (.025") pitch H-Cap and shielded versions
 - *0.80mm (.031") pitch SMT tin-plated versions
 - *1.00mm (.039") pitch Mezzanine IEEE 1396

molex® SlimStack™ SMT Board-to-Board Connector Family



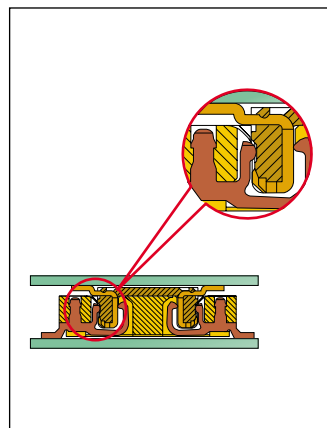
FEATURES AND BENEFITS FOR SLIMSTACK 0.4 AND 0.5MM

Space Savings



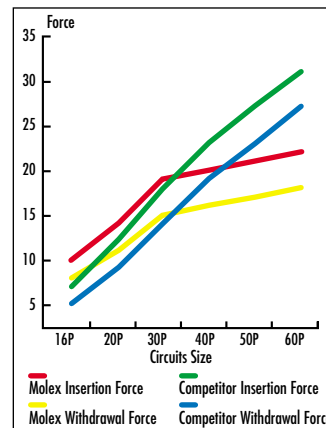
J-Lead type SMT tail is 35% smaller than standard Gull Wing type.

Locking Feature



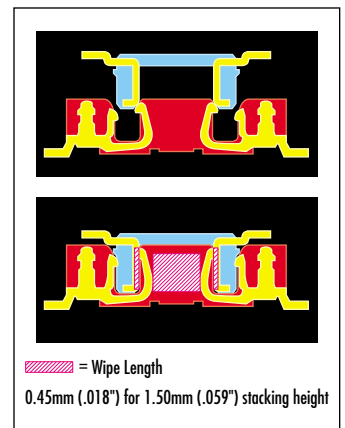
Friction lock provides added mating retention to withstand shock or vibration.

Superior Mechanical Forces



Friction lock on select circuits provides superior mating/unmating forces.

Wipe Length



Long wipe length helps provide good electrical reliability.

SLIMSTACK 0.40MM (.016") PITCH SELECTION GUIDE

Key Selection Criteria To Help You Choose The SlimStack 0.40mm (.016") Pitch Connector That Meets Your Needs

Product Description	Series	Mated Height	Space Comparison 50ckt Receptacle Length x Width	Features and Benefits
Single-Row Ultra Low Profile 	500463 - Rec 500464 - Plg	0.95mm (.037")	37.24mm ² *	0.95mm (.037") Stack Height Single Row → 1. Ultra Low Profile 2. Lower Circuit Sizes 3. For FPC-to-Board only
Dual-Row Ultra Low Profile 	500024 - Rec 500027 - Plg	0.95mm (.037")	64.7mm ²	0.95mm (.037") Stack Height → 1. Ultra Low Profile 2. BTB or FPC-to-Board
Space Saving J-Lead 	51338 - Rec 55909 - Plg	1.50mm (.059")	44.54mm ²	J-Lead SMT Tail (51338 only) → 1. Ultra Small PCB Footprint Width 2. BTB or FPC-to-Board
Standard with Solder Tabs & Mating Guides 	54765 - Rec 55604 - Plg	1.50mm (.059")	75.92mm ²	Mating Guide → 1. Superior Mating Alignment 2. BTB or FPC-to-Board
Standard with Solder Tabs 	54518 - Rec 53372 - Plg	1.50mm (.059")	72.8mm ²	With Solder Tab → 1. Extra PCB Retention 2. BTB or FPC-to-Board
Standard 	54796 - Rec 55622 - Plg	1.50mm (.059")	62.0mm ²	Robust Proven Design → 1. Quality & Performance 2. BTB or FPC-to-Board

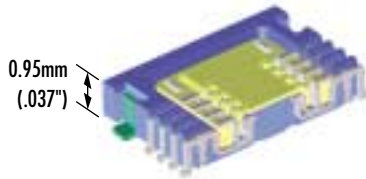
* For 22 circuit version

NEW 0.95MM (.037") HEIGHT SINGLE AND DUAL ROW VERSIONS

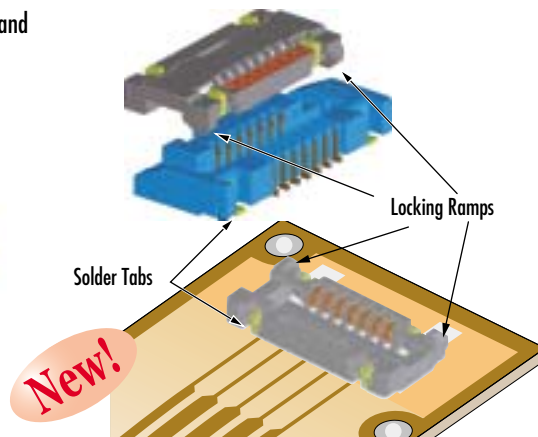
Molex's newest 0.95mm (.037") height SlimStack 0.4 series offer ultra low profiles, small circuit sizes, and options for FPC or BTB mounting.



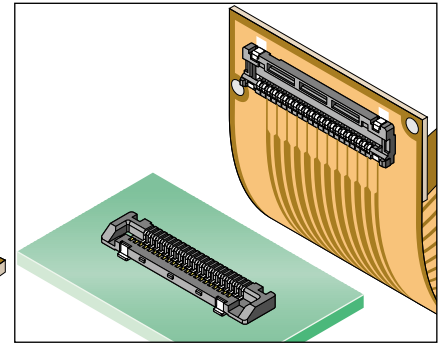
0.40mm (.016") Pitch SlimStack™ SMT



Dual-Row Version Mated View
(BTB or FPC-to-Board)



Single-Row Version
(FPC-to-Board only)
(Plug or Receptacle on FPC)

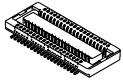
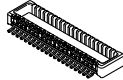
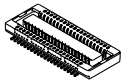
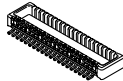
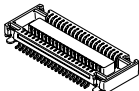
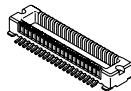
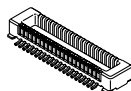


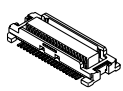

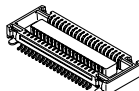
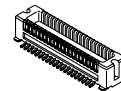
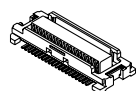
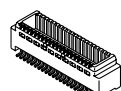
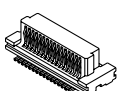
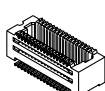
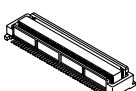
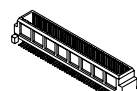
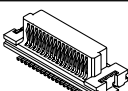
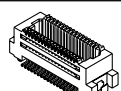
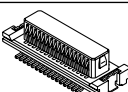

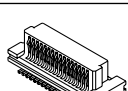
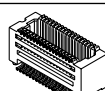


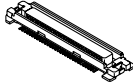

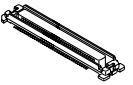
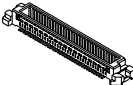






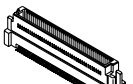
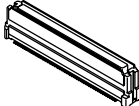




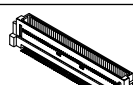

Single Row 0.95mm (.037") Height
FPC-to-Board Application

SLIMSTACK™ 0.4 SELECTION GUIDE

Mated Height	Receptacle	Plug	Circuit Sizes	Voltage/Current
0.95mm (.037")	500463-XXX9 Single-Row With Solder Tabs <i>For FPC-to-Board only</i>	500464-XXX9 Single-Row With Solder Tabs <i>For FPC-to-Board only</i>	7, 16, 22	50V/0.1A
0.95mm (.037")	500024-XXX1 Dual-Row With Solder Tabs	500027-XXX1 Dual-Row With Solder Tabs	16, 24, 30, 40, 50 60, 64, 70, 80	50V/0.1A
1.50mm (.059")	51338-XXX4 With Space Saving J-Lead Tails and Solder Tabs	55909-XXX4 With Solder Tabs	20, 22, 30, 40 50, 60, 80, 120	50V/0.3A
1.50mm (.059")	54796-XXX4	55622-XXX8	40, 50, 60, 80, 90	50V/0.3A
1.50mm (.059")	54518-XXX2 With Solder Tabs	55372-XXX8 With Solder Tabs	60, 80, 100	50V/0.3A
1.50mm (.059")	54765-XXX4 With Solder Tabs and Guide Posts 54765-XXX7: And Pegs (30, 50, 70, 80 circuits)	55604-XXX6 With Solder Tabs and Guide Posts 55604-XXX8: And Pegs (30, 50, 54, 70 circuits)	22, 30, 40, 44 50, 54, 70, 80	50V/0.3A
2.50mm (.098")	54876-XXX4 With Solder Tabs	55686-XXX6 With Solder Tabs	120	50V/0.3A
3.00mm (.118")	500288-XXX0 With Solder Tabs (40 circuits) 500120-XXX0: And Pegs (50 circuits)	55686-XXX6 With Solder Tabs (40 circuits) 55686-XXX7: And Pegs (50 circuits)	40, 50	50V/0.3A
3.50mm (.138")	54684-XXX4	55526-XXX8	70, 80, 120	30V/0.3A
4.00mm (.157")	54477-XXX8 With Pegs	55339-XXX8 With Pegs	80, 90, 120	30V/0.3A
Right Angle	54552-XXX6	55394-XXX6	40, 80	30V/0.3A

Coming Soon: 1.30 and 1.80mm (.051 and .071") stack height versions. Contact Molex for details.

Mated Height	Receptacle	Plug	Circuit Sizes	Voltage/Current
1.50mm (.059")	54722-XXX7/8 	55560-XXX7/8 	16, 20, 22, 24, 30, 34, 40, 46, 50, 60, 80	50V/0.5A
2.00mm (.079")	54729-XXX8 	55559-XXX8 	16, 20	50V/0.5A
2.00mm (.079")	54363-XXX8 With Solder Tabs 	55201-XXX8 With Solder Tabs 	20, 80, 120, 140	50V/0.5A
2.00mm (.079")		55650-XXX8 With Solder Tabs 	30, 40, 50, 60, 70, 110	50V/0.5A
2.50mm (.098")	54102-XXX8 No Tabs (20, 30, 40, 50, 60, 70 circuits) 54150-XXX8 With Solder Tabs (50, 60, 70, 80 circuits) 	53885-XXX8 No Tabs (20, 30, 40, 50, 60, 70 circuits) 53949-XXX8 With Solder Tabs (50, 60, 70, 80 circuits) 	20, 30, 40, 50, 60, 70, 80	50V/0.5A
3.00mm (.118")	52991-XXX8/ 54167-XXX8 	53748-XXX8 	20, 30, 40, 50, 60, 70, 80	50V/0.5A
3.00mm (.118")	54363-XXX8 With Solder Tabs 	55299-XXX8 With Solder Tabs 	20, 30, 40, 100, 120, 140	50V/0.5A
4.00mm (.157")	52991-XXX8/ 54167-XXX8 	53916-XXX8 	20, 30, 40, 50, 60, 80	50V/0.5A
5.00mm (.197")	54206-XXX9 	55018-XXX9 	60, 80	50V/0.4A
5.00mm (.197")	54450-XXX8 	55306-XXX8 	140	50V/0.5A
5.50mm (.217")	54230-XXX8 With Solder Tabs and Pegs 	55055-XXX8 With Solder Tabs and Pegs 	50, 60, 80	60V/0.4A
5.60mm (.220") Right Angle	54434-XXX9 With Solder Tabs 	55289-XXX9 With Solder Tabs 	40, 60, 70	50V/0.5A
6.00mm (.236")	54124-XXX8 With Pegs 	53887-XXX8 With Pegs 	60	60V/0.4A

Mated Height	Receptacle	Plug	Circuit Sizes	Voltage/Current
3.00mm (.118")	52921-XXX4/XXX8/XXX9 	53671-XXX4/XXX8/XXX9 	40, 60, 80, 140	100V/0.5A
4.00mm (.157")	52883-XXX4/XXX5 	53623-XXX4/XXX5 	20, 40, 80, 100, 140	100V/0.5A
5.00mm (.197")		52760-XXX8/XXX9 52885-XXX4/XXX5 	20, 40, 60, 80, 100, 120, 140, 160, 180, 200, 240	100V/0.5A
6.00mm (.236")		55091-XXX4/XXX5/XXX9 	20, 40, 60, 80, 100, 120, 140, 160, 180, 200, 240	100V/0.5A
7.00mm (.276")		53481-XXX8/XXX9 53625-XXX4/XXX5 	20, 40, 60, 80, 100, 120, 140, 160, 180, 200, 240	100V/0.5A
8.00mm (.315")		53551-XXX8/XXX9 53647-XXX4/XXX5 	20, 40, 60, 80, 100, 120, 140, 160	100V/0.5A
9.00mm (.354")		53552-XXX9 53649-XXX4/XXX5 	40, 80, 100, 140, 160	100V/0.5A
10.00mm (.394")		53553-XXX8/XXX9 53627-XXX4/XXX5 	20, 40, 60, 80, 100, 120, 140, 160, 180, 200	100V/0.5A
11.00mm (.433")		53475-XXX8/XXX9 53643-XXX4/XXX5 	20, 40, 60, 80, 120, 140, 160, 180	100V/0.5A
12.00mm (.472")		55091-XXX4/XXX5/XXX9 	20, 40, 60, 80, 120, 140, 160, 180	100V/0.5A
13.00mm (.512")		53481-XXX8/XXX9 53625-XXX4/XXX5 	20, 40, 60, 80, 120, 140, 160, 180	100V/0.5A
14.00mm (.551")		53551-XXX8/XXX9 53647-XXX4/XXX5 	20, 40, 60, 80, 120, 140, 160	100V/0.5A
15.00mm (.591")		53552-XXX9 53649-XXX4/XXX5 	40, 80, 140	100V/0.5A
16.00mm (.630")		53553-XXX8/XXX9 53627-XXX4/XXX5 	20, 40, 60, 80, 120, 140, 160, 180	100V/0.5A

*Note: For above Packaging; please see below. For further details, please visit molex website.

- XXX4: Embossed Tape Packaging with Vacuum Cover
- XXX5: Tube Packaging with Vacuum Cover
- XXX8: Embossed Tape Packaging
- XXX9: Tube Packaging

0.635MM (.025") PITCH HIGH-SPEED CAPABILITIES

molex® 0.635mm (.025") SlimStack Related Capabilities

SlimStack 0.635mm: Up to 3 GHz Performance Across The Board

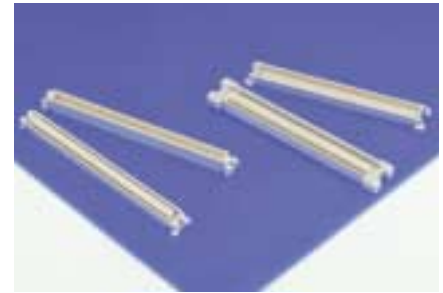
Molex's 0.635mm (.025") pitch connectors are tested to accommodate frequency rates up to 3 GHz for various high-speed applications. With a broad range of circuit sizes and stack heights, SlimStack offers an economical way to achieve high-speed performance in both 50 and 100 Ohm systems.

These high-speed capabilities apply for all SlimStack 0.635 versions shown on page 5 of this catalog.

For even higher speeds, Molex's Plateau HS Mezz™ system offers up to 10 Gb/s (6.8 GHz). See Molex website for details.

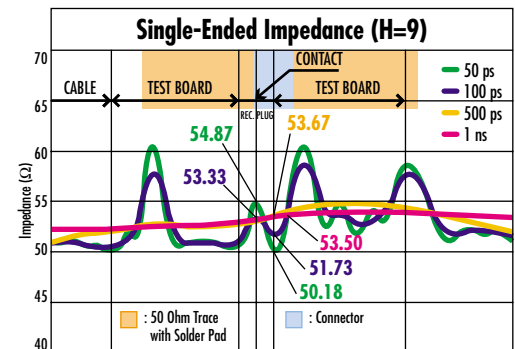
The SlimStack High-Speed Unshielded Advantage:

- 3 GHz performance
- Cross Talk < 7%
- For 50 and 100 Ohm applications
- Economical design
- 3.00 to 16.00mm stack heights
- 20 to 240 circuits
- Superior terminal design/wipe length
- Easy board processing
- H-SPICE and 3d VRML models
- Test data available



Height (mm)	Cross Talk @100ps			Impedance		Insertion Loss		Skew Pico Second
	Frequency	Near End	Far End	R _T	Ohms	Frequency	dB	
9	1	4.7	6.5	50	54.9	1	0.23	0
	2	4.6	6.4	100	53.3	2	0.13	0
	3	4.5	6.6	500	53.7	3	1.72	0

*Note: Above test results based on single-ended measurements, 1:1 signal/ground layout and 9.00mm (.354") stack height.



SHIELDED SLIMSTACK™ 0.635MM OPTIONS

Molex offers several versions of 0.635mm (.025") Pitch SMT board-to-board connectors with metal shielding for additional EMI/RFI protection. Our fully-shielded version with chamfered lead-ins shown on the right (55952/51411) is available in 110 circuits in 20.00mm (.787") stack heights. It is ideal for high frequency applications such as flat-panel displays, video games or servers.



We also offer custom versions with shielding that can be used for applications such as high-density docking.

Plug	Receptacle
55952-1121	51411-1111

Mated Height	Circuits
20.00mm (.787")	110


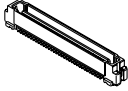

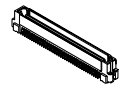

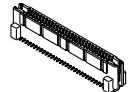
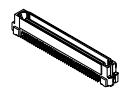

H-CAP

Molex's 0.635mm (.025") pitch H-Cap SMT connector system includes two standard 0.635mm connectors and an H-shaped plastic cap that helps position the connectors on the PCB prior to soldering. The system

provides a cost-efficient way to create high circuit-size Mezzanine type connections. The system is ideal for applications such as: PCs, Servers, CPU cards, Option cards (Memory, Controllers); any mezzanine application.



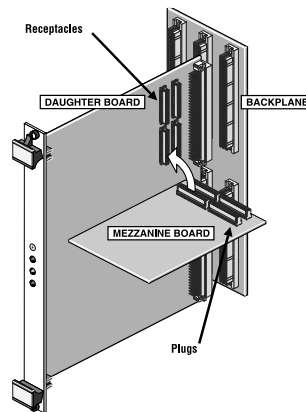
Mated Height				Circuit Sizes	Voltage/Current
6.00mm (.236")		Receptacle: 54425	Plug: 55275	240	100V/0.5A
7.00mm (.276")		54425	55293	240	
7.00mm (.276")		54345	55847	480	
11.00mm (.433")		54662	55506	360	
12.00mm (.472")		54662	55927	280	

Mated Height	Receptacle	Plug	Circuit Sizes	Voltage/Current
8.00mm (.315")	52584-XXX9 	53395-XXX9 	20, 34, 66, 100, 140	100V/0.5A
9.00mm (.354")		53396-XXX9 	100	100V/0.5A
10.00mm (.394")		53397-XXX9 	50, 80, 84, 100, 120, 140	100V/0.5A
18.00mm (.709")		53408-XXX9 	50, 60, 80, 100, 120, 140	100V/0.5A
12.00mm (.472")	52602-XXX9 	53397-XXX9 	50, 120, 140	100V/0.5A
20.00mm (.787")		53408-XXX9 	24, 50, 60, 120, 140	100V/0.5A

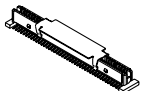
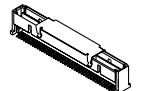
1.00MM (.039") PITCH MEZZANINE IEEE 1386

The IEEE P1386 standard contains the details for adding standardized general option, PCI and S-bus mezzanine cards to VMEbus and Multibus host boards. There are also many LAN, WAN, telecom, PC and workstation users who want a standardized mezzanine scheme, and see the IEEE P1386 as the best approach.

Molex's fully shrouded leaf-style design minimizes the chance of damaging plug contacts, and our receptacle contacts feature a low mating force, reducing PCB stress. Gold-over-Nickel contact plating enhances long-term reliability and UL 94V-0 LCP housings withstand SMT reflow processes. Excellent tolerance absorption allows the connectors to be used in combinations of 1-4 mated pairs for up to 256 circuits.



Mezzanine IEEE 1386 (64 circuits)

Mated Height	Receptacle 71439	Plug 71436
8.00mm (.315")		
9.00mm (.354")		
10.00mm (.394")		
11.00mm (.433")		
12.00mm (.472")		
13.00mm (.512")		
14.00mm (.551")		
15.00mm (.591")		

OTHER FINE-PITCH MICRO CONNECTORS



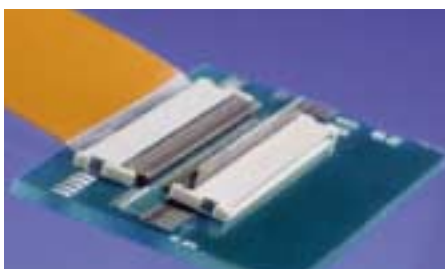
0.50mm (.020") Pitch Wire-to-Board Connectors



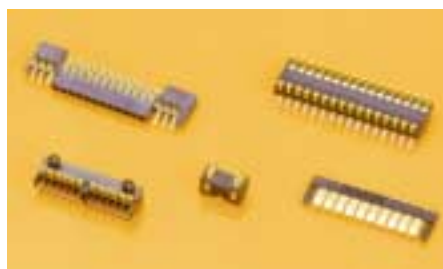
Miniature Memory Card Connectors



CradleCon™ 0.50mm (.020") Pitch I/O Connectors



Ultra Low-Profile FFC (0.90mm (.035") Height)



Compression Connectors



1.25mm (.049") Pitch Wire-to-Wire Connectors



Bringing People & Technology Together, WorldwideSM

Americas Headquarters

Lisle, Illinois 60532 U.S.A.
Tel: 1-800-78MOLEX
amerinfo@molex.com

Far East North Headquarters

Yamato, Kanagawa, Japan
Tel: 81-462-65-2324
feninfo@molex.com

Far East South Headquarters

Jurong, Singapore
Tel: 65-6268-6868
fesinfo@molex.com

European Headquarters

Munich, Germany
Tel: 49-89-413092-0
eurinfo@molex.com

Corporate Headquarters

2222 Wellington Court
Lisle, Illinois 60532 U.S.A.
Tel: 630-969-4550
amerinfo@molex.com

Visit our website at www.molex.com